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EXAMINER
FLEURANTIN, J

ART UNIT	PAPER NUMBER
2172	7

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/269,624	Applicant(s) Angus et al.
	Examiner Jean Bolte Fleurantin	Art Unit 2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ___*three*___ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-82* _____ is/are pending in the application.

    4a) Of the above, claim(s) *31-46 and 51-82* _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-30 and 47-50* _____ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

   a) ☒ All b) ☐ Some* c) ☐ None of:

    1. ☒ Certified copies of the priority documents have been received.

    2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

  *See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *2-3, 6*

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other: _____

DETAILED ACTION

Election/Restriction

1.   Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I, Claims 1-30, and 47-51 drawn to database or file accessing, classified in Class

707, subclass 1.

Group II, Claims 31-46, and 51-82, drawn to database schema or data structure, classified

in Class 717, subclass 100.

2.   The inventions are distinct, each from the other because of the following reasons:

Inventions I-II are independent since they are not connected in design operation or effect

under the disclosure of the particular application under consideration.

3.   Because these inventions are distinct for the reasons given above and have acquired a

separate status in the art as shown by their different classification, restriction for examination

purposes as indicated is proper.

4.   Because these inventions are distinct for the reasons given above and the search required

for Group I is not required for Group II, restriction for examination purposes as indicated is

proper. Also, claims 31-46, and 51-82 have been described on pages 1-2; 4; 6, and 22, lines 10-

10; 3-17; 4-13, and lines 10-22.

5.   In accordance with M.P.E.P. 812.01 a telephone call was made by Examiner Jean Bolte

Fleurantin Art Unit 2172 to Applicant's attorney/agent of the record Mr. T. Ward on July 12-13,

2001. Group I has been selected with traverse.

Claim Rejections - 35 U.S.C. § 112

6. Claims 1 and 47 are rejected under U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out correlation between the two types of records.

In claim 1, lines 6-7; and 9-10: multiple operations records each storing data relating to

one or more historical operation involving at least one entity; multiple entity records storing data

indicating relationships between said entities.

Claim Rejections - 35 U.S.C. § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

Claims 1-30, and 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Doktor (US Pat. No. 5,675,779), 'submitted by the Applicant'.

As per claims 1 and 47, Doktor substantially teaches a data processing system comprising

a data storage device and a processor programmed to read data from, and write data to, said

storage device, in which said storage device stores: a) multiple operation records each storing

data relating to one or more historical operation involving at least one entity, each said operation

record comprising data recording the operation, and data defining a date associated with the

operation (thus, each of these answer is recorded as a paired set of an entity class number and an

entity instance number, in response the entity storage means then produces detailed information

from the referenced entity instance tables; which is readable as multiple operation records each

storing data relating to one or more historical operation involving at least one entity, each said

operation record comprising data recording the operation) (see col. 33, lines 1-8);

b) multiple entity records storing data indicating relationships between said entities (thus,

relational database tables are normally organized to create implied set and relations between their

respective items of prestored information, which is readable as multiple entity records storing

data indicating relationships between said entities) (see col. 5, lines 33-49). But, Doktor does not

explicitly indicate the step of each said relationship being associated with a historical period of

validity. However, Doktor implicitly shows the step of the set of entities and relationships may

be expanded at any time during the life of the system without reprogramming or compiling

computer code and without disrupting concurrent use of the system, which is readable as

relationship being associated with a historical period of validity (see abstract, lines 4-7). Also, in

column 5, lines 58 through 61, Doktor teaches if the second key number is matched a

corresponding key number in the first table then a relationship might be implied between the

entries of the two separate tables. Thus, it would have been obvious to a person of ordinary skill

in the art at the time the invention was made to modify the teachings of Doktor with the step of

each said relationship being associated with a historical period of validity. This modification

would allow the teachings of Doktor to provide a database system which is capable of storing

voluminous amount of information sifting through the information at high speed and is at the

same time easily expandable or restructurable to take on new forms of entities and relationships

(see col. 6, lines 51-56).

As per claim 2, Doktor substantially teaches a system as claimed, wherein the processor is

programmed to extract output data from a subset of said operation records, and to output said

output data (thus, the implies relations between elements cannot be discerned by simply

inspecting the raw data of each table instead relations are flushed out only with the aid of an

access control program, which is readable as extract output data from a subset of said operation

records, and to output said output data) (see col. 5, lines 33-46).

As per claim 3, Doktor substantially teaches a system as claimed, wherein the processor is

programmed to select said subset by the steps of: inputting instructions defining one or more

selected entities for which said output data relates (thus, relations may be explicitly defined in a

relation instances table so that unique relations between instances of a first entity class and

instances and a second entity class can be identified, which is readable as inputting instructions

defining one or more selected entities for which said output data relates) (see figure 7, col. 7,

lines 50-52);

selecting said subset based on both the dates stored in said operation records and the

historical periods of validity associated with the selected entities (thus, the implies relations

between elements cannot be discerned by simply inspecting the raw data of each table instead

relations are flushed out only with the aid of an access control program, which is readable as

selecting said subset based on both the dates stored in said operation records and the historical periods of validity associated with the selected entities) (see col. 5, lines 33-46).

As per claims 4 and 7, in addition to the discussion in claim 1, Doktor substantially teaches a system as claimed, wherein the processor is programmed to select said subset to represent by the steps of inputting an analysis date (thus, relations may be explicitly defined in a relation instances table so that unique relations between instances of a first entity class and instances and a second entity class can be identified, which is readable as wherein the processor is programmed to select said subset to represent by the steps of inputting an analysis date) (see col. 7, lines 50-52);

selecting said subset using those selected entity relationships ((thus, relational database tables are normally organized to create implied set and relations between their respective items of prestored information, which is readable as selecting said subset using those selected entity relationships) (see col. 5, lines 33-35).

As per claim 5, Doktor substantially teaches a system as claimed, wherein the processor is programmed to offer the current date as a date option, to permit analysis of operation records anterior to that date as if the current relationship between entities had previously existed (thus, (see col. 5, lines 33-49). And, also column 3, lines 36 through 42.

As per claim 6, the limitations of claim 6 are rejected in the analysis of claim 1 above, and this claim is rejected on that basis.

As per claim 8, Doktor substantially teaches a system as claimed, wherein the processor is programmed to input a change from an existing said relationship between entities to a new said relationship (thus, databases require similar restructuring every time a new category of information relationships or a new type of inquiry is created, which is readable as input a change from an existing said relationship between entities to a new said relationship) (see col. 3, lines 36-42).

As per claim 9, Doktor substantially teaches a system as claimed, wherein the processor is programmed, on such a change, to store an end date for the period of validity of the existing relationship; to create a record of the new relationship, and to store a start date therefor (thus, databases require similar restructuring every time a new category of information relationships or a new type of inquiry is created, which is readable as on such a change, to store an end date for the period of validity of the existing relationship; to create a record of the new relationship, and to store a start date therefor) (see col. 3, lines 36-42).

As per claims 10 and 26, in addition to the discussion in claim 1, Doktor substantially teaches a system as claimed, wherein the entity records comprise: an entity record for each entity (thus, relationships processing computing system provides for the recording and extraction of data objects 'entities' and for development data representing as queried relationship between data objects 'entities'; which is equivalent to wherein the entity records comprise: an entity record for each entity) (see abstract, lines 1-4);

an association record for each past or present relationship between a pair of said entities

(thus, each of these answer is recorded as a paired set of an entity class number and an entity

instance number, in response the entity storage means then produces detailed information from

the referenced entity instance tables; which is readable as an association record for each past or

present relationship between a pair of said entities (see col. 33, lines 1-9).

As per claim 11 and 12, the limitations of claims 11 and 12 are rejected in the analysis of

claim 48, and these claims are rejected on that basis.

As per claim 13, Doktor substantially teaches a system as claimed, wherein the entity

records represent first and second successive levels of hierarchy of a product family (see col. 5,

lines 33-38).

As per claim 14, in addition to the discussion in claim 1, Doktor teaches a system as

claimed, wherein the processor is programmed to extract output data from a subset of said

operation records and to output said output data, wherein the processor is programmed further to

select said subset by the steps of inputting instructions defining one or more selected entities for

which said output data relates (thus, relations may be explicitly defined in a relation instances

table so that unique relations between instances of a first entity class and instances and a second

entity class can be identified, which is readable as wherein the processor is programmed to

extract output data from a subset of said operation records and to output said output data,

wherein the processor is programmed further to select said subset by the steps of inputting

instructions defining one or more selected entities for which said output data relates) (see figure

7, col. 7, lines 50-52);

determine, for said operation records within said period, if said operation records relate to

said selected entities throughout the whole of said period (thus, the set of entities and

relationships may be expanded at any time during the life of the system without reprogramming

or compiling computer code and without disrupting concurrent use of the system, which is

readable as determine, for said operation records within said period, if said operation records

relate to said selected entities throughout the whole of said period) (see abstract, lines 4-7).

As per claims 15 and 49, Doktor substantially teaches a system as claimed, wherein, if

said operation records do not span the whole of said period, for each selected said entity to which

the operation records relate, the processor is programmed to determine, from said entity records,

a hierarchically higher entity and to repeat said determination and, in the event that said operation

records relate to said hierarchically higher entity throughout the whole of said period, to use said

hierarchically higher entity instead of said selected entity in selecting said subset of operation

records (thus, the elements of the lowest level subsets are stored in base tables and higher level

sets are built by defining in other tables combinations of keys which point to the base tables,

which is readable as wherein, if said operation records do not span the whole of said period, for

each selected said entity to which the operation records relate, the processor is programmed to

determine, from said entity records, a hierarchically higher entity and to repeat said determination

and, in the event that said operation records relate to said hierarchically higher entity throughout

the whole of said period, to use said hierarchically higher entity instead of said selected entity in selecting said subset of operation records) (see col. 5, lines 35-40).

As per claim 16, Doktor substantially teaches a system as claimed, in which said storage means contains multiple sets of said operation records, each said set comprising multiple said operation records, said sets relating to different classes of operations and said records within each set relating to different instances of the same type of operation (see cols. 16 and 17, lines 63-67, and 1-5).

As per claims 17, Doktor substantially teaches a system as claimed, in which each said operation record contains at least one variable data field storing a value of a measure from a range of possible said values for said measure (thus, the elements of the lowest level subsets are stored in base tables and higher level sets are built by defining in other tables combinations of keys which point to the base tables, which is readable as in which each said operation record contains at least one variable data field storing a value of a measure from a range of possible said values for said measure) (see col. 5, lines 35-38).

As per claims 18 and 20, Doktor substantially teaches a system as claimed, in which said storage means further contains: c) metadata comprising multiple operation definition records, each defining the format of records of a respective said set of operation records (thus, development data representing a queried relationship between data objects, which is readable as metadata comprising multiple operation definition records, each defining the format of records of a respective said set of operation records) (see abstract, lines 1-7).

As per claim 19, Doktor substantially teaches a system as claimed, in which each said operation record contains at least one variable data field storing a value of a measure from a range of possible said values for said measure, and in which each operation definition record indicates the units of said measure (thus, the elements of the lowest level subsets are stored in base tables and higher level sets are built by defining in other tables combinations of keys which point to the base tables, which is readable as in which each said operation record contains at least one variable data field storing a value of a measure from a range of possible said values for said measure, and in which each operation definition record indicates the units of said measure) (see col. 5, lines 33-38).

As per claims 21 and 50, Doktor substantially teaches a system as claimed, wherein the processor is programmed to: input at least one measure derivable from said operation records, to be analyzed (thus, databases require similar restructuring every time a new category of information relationships or a new type of inquiry is created, which is readable as input at least one measure derivable from said operation records, to be analyzed) (see col. 3, lines 36-42);

determine, for each said set of operation records, whether said measure can be derived therefrom (see col. 3, lines 61-67);

where said measure could be derived from alternative said sets, select one of said sets (see col. 30, lines 28-33).

As per claim 22, Doktor substantially teaches a system as claimed, wherein said selection is based at least in part on the relative sizes of said sets (see abstract, lines 4-6).

As per claim 23, Doktor substantially teaches a system as claimed 23, wherein said selection is based at least in part on the relative difficulty of deriving said measure from the data stored in the variable data fields of each of said sets (thus, the set of entities and relationships may be expanded at any time during the life of the system without reprogramming or compiling computer code and without disrupting concurrent use of the system, which is readable as wherein said selection is based at least in part on the relative difficulty of deriving said measure from the data stored in the variable data fields of each of said sets) (see abstract, lines 4-6).

As per claim 24, in addition to the discussion in claim 21, Doktor teaches where necessary, derive said measure from a combination of a first value from a variable data field of a record of a first set of operation records, and a second first value from a variable data field of a record of a second set of operation records (thus, for development data representing a queried relationship between data objects, which is readable as derive said measure from a combination of a first value from a variable data field of a record of a first set of operation records, and a second first value from a variable data field of a record of a second set of operation records) (see abstract, lines 2-4).

As per claim 25, in addition to the discussion in claims 21 and 24, Doktor teaches where necessary, derive said measure from an aggregation of first values from respective variable data fields of a plurality of records of a first set of operation records, having dates spanning a predetermined input time interval (thus, the set entities and relationships may be expanded at any time during the life of the system without reprogramming, which is readable as derive said

measure from an aggregation of first values from respective variable data fields of a plurality of

records of a first set of operation records, having dates spanning a predetermined input time

interval) (see abstract, lines 1-9).

As per claim 27, Doktor substantially teaches a system as claimed, wherein said

transactions are sales, inventory, or purchase transactions (see col. 17, lines 12-30).

As per claim 28, Doktor substantially teaches a system as claimed, wherein said processor

is programmed to load one or more new said operation records into said storage device (see col.

3, lines 36-42).

As per claim 29-30, Doktor substantially teaches a system as claimed, wherein said

processor is programmed to load one or more new said operation records into said storage

device, and in which said processor is programmed to determine whether said new operation

records comply with said metadata (see abstract, lines 1-7).

As per claim 48, in addition to the discussion in claim 1, Doktor teaches wherein the

entity records comprise a hierarchical structure, in which at least d first entity record relates to a

specific entity, and a second to a more generic entity encompassing said specific entity, said

records including link data linking said first and second entity records whereby to allow said

processor to traverse said, hierarchy (thus, wherein logical links between a first informational

object first piece of real data and a second informational object second piece of real data are

established by a chain of direct or indirect address pointers, which is readable as in which at least

d first entity record relates to a specific entity, and a second to a more generic entity

encompassing said specific entity, said records including link data linking said first and second

entity records whereby to allow said processor to traverse; see col. 3, lines 60-63), said processor

being arranged to generate output data by inputting instructions defining one or more selected

entity dimensions across which said output data is to be distributed (see col. 4, lines 1-6).

8.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. Caso et al. US Patent Number 6,035,300 relates to a computer application system for

generating a working user interface, to a design tool that generates such from the entities.

Conclusion

9.   Any inquiry concerning this communication from examiner should be directed to Jean

Bolte Fleurantin at (703) 308-6718. The examiner can normally be reached on Monday to Friday
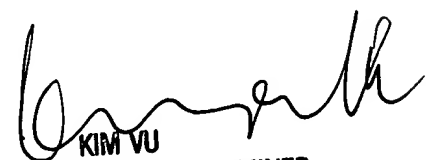
from 7:30 A.M. to 6.00 P.M.

If any attempt to reach the examiner by telephone is unsuccessful, the examiner's

supervisor, Mrs. KIM VU can be reached at **(703) 305-8449.** The FAX phone number is

(703) 305-9731.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone is **(703) 305-9600.**

Jean Bolte Fleurantin

July 25, 2001

JBF/

KIM VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100